LTP Learning Technologies Project Bulletin

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News from NASA

Learning Technologies Channel Draws Praise from Gore, Goldin

Mark León
mleon@mail.arc.nasa.gov

The Learning Technologies Project continues to gain national attention. On October 25, we demonstrated the Learning Technologies Channel (LTC) to Vice President Al Gore and NASA Administrator Daniel Goldin. Both were impressed with our ability to provide this technology to remote locations.

This launches a new phase in the development of an infrastructure to support the LTC. Currently, the LTC presents an impressive cadre of NASA projects to a few hundred users across the country. We have a vision to support up to 5,000 users within 18 months. With the current technology and available bandwidths, this can only be accomplished with a distributed digitized audio network. In the next few months, efforts to build this network with temporary software will be under way as a research and development project.

Initial partners for launching this testbed are Ames Research Center, Classroom of the Future, Independent Verification and Validation and Center, Langley Research Center, and Johnson Space Center. This beta network will be developed using existing resources. The project office will provide temporary software and, if warranted, purchase software licenses.

This project is part of a three-thrust approach. The first thrust is to build the infrastructure, the second is to leverage off the Learning Technologies Advocates, and the third is the empowerment of the Learning Technologies Channel.

NASA's Learning Technologies Project will launch a major event to kick off this testbed with the intention of disseminating to thousands of schools. The purpose is to champion your projects over the LTC to the educational community.

News Bytes

RSPAC Is Available for Web Site Test and Evaluation

John B. Hinkle
jhinkle@rspac.ivv.nasa.gov

Just a reminder: RSPAC offers test and evaluation services to CAT Web sites. The under lying software, appropriately named MoNsTeR!, will traverse your Web site and perform the following automated tests:

Link Verifier: This test verifies that each link on a Web page goes to a valid element, such as another URL (internal or external to a site), a graphic file, a sound file, etc.

HTML Verifier: This test checks over the HTML code for each Web page. Weblint, which checks for adherence to the HTML standards, is used to generate a report of errors found.

Download Time Verifier: This test reports the time needed to transmit a complete Web page, including all of its graphics elements.

Search Engine Verifier: Six of the most popular search engines (WebCrawler, Lycos, AltaVista, Yahoo!, Excite, and Infoseek) will be visited and searched to see if the Web site is listed within the top 100 entries on that search engine.

In addition to the automated tests, RSPAC provides the following manual testing:

Copyeditor Review: This is a less formalized test that RSPAC's copyeditor can perform on a site. A representational section of the site (determined by the person requesting the test and evaluation) is reviewed by the copyeditor for grammatical and punctuation errors, as well as for inconsistencies in style.

Page Rendering: A RSPAC reviewer will view a site under various browsers (Netscape, Internet Explorer, WebTV, etc.) and operating systems (Windows, Mac, UNIX, WebTV, etc.) and look for pages that render so badly that the intent of the page is lost.

For a more detailed description of the test and evaluation process, visit **http://developers.ivv.nasa.gov/tech/tne/tne.html**.

If you would like to be on the LTP Bulletin mailing list, please send e-mail to Scott Gillespie at sgillespie@rspac.ivv.nasa.gov, or write to BDM/RSPAC, 100 University Drive, Fairmont, WV 26554. Phone: (304) 367-8324, fax: (304) 367-8211.

News Bytes (Cont.)

Headline Scroller: JavaShop's Newest Product

John B. Hinkle
jhinkle@rspac.ivv.nasa.gov

The JavaShop is proud to announce its latest online applet, the "Headline Scroller." Headline Scroller is a great way to bring attention to different features on your site. It scrolls through a list of headlines one line at a time, and a URL can be associated with each headline. The Headline Scroller features completely customizable foreground and background colors, and an unlimited number of headlines to scroll.

Headline Scroller gives Web page programmers the ability to call attention to specific items online. With this applet, for example, a homepage may highlight a certain article, Web page, or other feature from that site and, when the scrolling line is clicked, will hyperlink the user to the featured page.

To see a working example of Headline Scroller, visit **http://developers.ivv.nasa.gov/tech/javashop/headline/**.

Sharing the Lessons We've Learned

Richard A. Kurnik
rkurnik@rspac.ivv.nasa.gov

RSPAC has moved its main development server (NASA's Observatorium) from a UNIX (Solaris 2.5) platform running an Apache Web server to a Windows NT system running the Netscape Enterprise Server 3.0. This transition occurred approximately six months ago. From the beginning, we've had difficulty recreating an environment as robust as UNIX on the Windows NT system. We've been plagued with one problem in particular that has traditionally made the httpd.exe create an exception and disable the server in such a way that it was inoperable until the screen error was cleared from the console. The error message that appeared with our particular error was "Memory Error at location xxxx. Cannot "Read" xxxx." This has been the signature of the problem we have been dealing with. The frequency of this problem has ranged from the server crashing every two hours to once in three weeks.

The status of the server right now seems to be stable. We've made some changes to the configurations which seem to have made it more stable, but we're still testing. We'd like to share some of the things we've learned from this ordeal with the readers of this issue of *LTP Bulletin.*

First, Netscape has an undocumented procedure in its server that reports the internal statistics of the server. If you're having trouble, ask a Netscape technician about the "perf" procedure. He or she will help you set it up. Here is the output of perf:

HTTP/1.1 200 OK
Server: Netscape-Enterprise/3.OF
Date: Fri, 07 Nov 1997 01:09:49 GMT
Content-type: text/plain
Connection: close

ListenSocket #0:

Address	https:\\129.164.40.232:80
ActiveThreads	74
WaitingThreads	67
BusyThreads	4
IdleThreads	0
Thread Limits	48/128

KeepAliveInfo:

KeepAliveCount	3/200
KeepAliveHits	955
KeepAliveFlushes	0

CacheInfo:

enabled	yes
CacheEntries	772/1024
OpenCacheEntries	772/1024
CacheSize (bytes)	8409046/10485760
Hit Ratio	1270/4854 (26.16)
numCacheInsertsOk	772
numCacheInsertsFail	0
numCacheDeletes	0
pollInterval	5
maxFileSize	537600

Server DNS cache disabled.

The Netscape Enterprise Server 3.0 was released with several serious HTTP 1.1 flaws. Make sure you're running the most current server patches. The latest should be "F" patch. You can also ask technicians at Netscape for the most recent version. Sometimes Netscape will give you more recent patches than those found on the Net. Patches can be found at **http://help.netscape.com/filelib.html**.

While diagnosing the problem with your server, verify that all your CGI scripts are running properly. This was one of the issues we were dealing with, but we didn't make that discovery until a person we had browsing the site hit the bad script that made the server go down.

Finally, we had changed our server file system structure. We decided to make this transparent by adding upwards of 50 redirects to the server configuration. I don't believe this is the intended purpose of redirecting. When we removed all the redirects our server stopped crashing.

Another important change in policy was to implement a written log of any and all problems/changes to the physical server. If we had done this from the beginning with the new server it would have been an important tool to help solve these issues.

In conclusion, we've found our problem to be linked to three separate issues, all producing the same consequence. These types of issues are difficult to resolve, especially when the server you're working on is active and being changed often. We first found the CGI program, then we made miscellaneous changes to our configuration files, and finally we removed the redirections. As of now our server has been running for over a week without a problem.

Rich Kurnik is system administrator for the Remote Sensing Public Access Center.

News Bytes (Cont.)

NASA's "Exploring the Internet" CD-ROM Still Available for the Remarkably Low Price of $3.50

If all the talk about the Web, the Net, and "dot com" has you curious, it's time to launch yourself into cyberspace — and NASA has the perfect tool for the beginning surfer.

NASA's "Exploring the Internet" CD-ROM is still available for the remarkably low price of $3.50, which includes shipping and handling. (Prices outside the US are slightly higher. See below.)

Exploring the Internet with NASA - This CD-ROM is designed to introduceyoung students or first-time adult users to the Internet. It contains over 150 NASA publications for educators, students, and the public, as well as a sampling of biographies of pilots and images of planes from NASA's Dryden Flight Research Center in Edwards, CA.

The CD-ROM casts students and first-time adult users as Internet explorers, taking them on an exciting, futuristic journey through cyberspace in a souped-up Spanish galleon. New online explorers discover what the Net is and what it's used for, and learn how to navigate it.

NASA's "Exploring the Internet" is also fun. Throughout the cyberjourney, you'll meet memorable characters who explain the wonders of the Internet through a fantastic display of color illustration, video clips, 3-D animation, music, and wild sound effects.

In short, NASA's "Exploring the Internet" is the perfect tool for the classroom — or anyone — who wants to learn about the Internet in an entertaining way.

The CD-ROM was developed to bring the excitement of the Internet to your computer and showcase the vast resources NASA and others make available via the Web. It is minimally priced to make it available to the broadest possible audience.

To find out more about NASA's "Exploring the Internet" CD-ROM, visit the Web site at **http://cdrom.ivv.nasa.gov.**

To order, send check or money order (in US dollars only) payable to BDM to:

BDM-RSPAC
Attention: CD-ROM
100 University Drive
Fairmont, WV 26554

All about CATs

MCET News and Happenings

Francesca Casella
franc@mcet.edu

Web Page

The Massachusetts Corporation for Educational Telecommunications' (MCET) new pages are ready for the final evaluation run. The incompatibility between the Java code script and the Mac platforms was identified at the operating system level. OS v.8. exhibited normal functioning, whereas with lower versions the Java code was particularly unstable. As the instability was severely interfering with the machine's operation, all Mac traffic, independent of the operating system, was diverted to a customized set of pages aligned with a lower standard. This solution is far from optimal, as it sacrificed the internal consistency of the pages among different users and multiplied the number of pages developed to accommodate different browsers. It was decided, however, that duplicating the site was preferable to limiting access to a particular group of users.

The final evaluation will be completed next week and the page will be linked soon afterward at the current address of **http://www.mcet.edu/nasa/**.

Not all the Career Guest cards are developed, but new cards will be added as soon as the new pages go public.

A portable demo version of the new site made a debut in Denver at the National School Board Association Conference, November 3-6 (attendance: 4,500).

General News

Three new user MEOL accounts were set up for the teachers in Danvers High School, Danvers, MA. The costs of implementing the Take Off! project in Danvers are supported through a grant from the Medtronic Foundation. All previous Internet accounts for the teachers at the core sites have been transferred to the new Internet network. Reconfiguration of individual computers and training and online assistance through MCET's Help Desk are under way. The new accounts are tailored to allow the teachers to use the accounts from their homes. The response to MCET's new MEOL initiative has been very positive.

MCET's project director met with FAA representative Shelia Bauer (manager of aviation education programs, New England region) to discuss potential partnerships with the schools and different ways to make the project survive beyond the funding period. They identified the possibility of combining FAA resources, MCET's aviation and technology resources, and the support of aviation industry representatives from Logan Airport to implement an aviation curriculum and careers program at East Boston High School.

Principal investigator P. Cardie Texter attended the roundtable discussion of the future of the Department of Transportation's new initiative, the Garrett A. Morgan Technology and Transportation Futures Program, in Washington, DC, on October 30. The DOT program might help to secure funding and/or additional support for the East Boston initiative.

A mailing of 12 Take Off! kits to Native American schools and communities was completed. The dissemination project was supported with funding from the America West Airlines Foundation.

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CAT in the Spotlight

NASA Quest Project Announces the Opening of NeurOn

Linda Conrad
lconrad@mail.arc.nasa.gov

NeurOn (Neurolab Online) is an educational outreach project centered around the Neurolab shuttle mission scheduled for launch April 2, l998. NeurOn is directed toward K-12 students and teachers and coordinated with NASA Space Life Sciences Outreach. It is hosted online by the NASA Quest Web site, with video coverage by WPSX-TV, a member station of PBS. NeurOn is located at **http://quest.arc.nasa.gov/neuron**.

Neurolab, the last in the series of Spacelab flights, concentrates on how the brain and nervous system develop and function in microgravity. As NeurOn becomes active, classrooms around the world will be encouraged to "participate" with the NASA team in the preparations for the Neurolab mission, STS-90. NeurOn uses the Internet and e-mail to make the connection between the classroom and NASA.

The NeurOn project focuses primarily on the people of the project, their efforts, their successes, and their challenges. "We involve communicators, educators, students, and 'just folks' in the day-to-day reality of what the researchers and engineers in the space life sciences community do," said Rosalind A. Grymes of the Outreach Program for the Life Sciences. "We try to inspire them to 'keep the dream alive' by sharing the fascinating world of NASA's life sciences projects and by striving to share the human face of spaceflight."

Twenty-six principal investigators and their more than 80 co-investigators, representing seven countries, will have experiments on this flight. Ground personnel assemble the hardware and needs like food, water, and experiment supplies for the 16-day mission aboard the space shuttle Columbia. A seven-member crew will then carry out the 26 investigations in the microgravity environment aboard Spacelab. Throughout this process, NeurOn plans to enable the classrooms to vicariously share the experiences of these scientists, engineers, and technicians in their diverse roles through biographies and field journals online.

As the Neurolab mission prepares for and conducts research, students in the classroom will participate in activities which allow them to simulate some of the activities and experiences of the scientists and engineers to better understand the mission. Curriculum materials will be made available to facilitate this classroom participation.

"While the foremost goal of Neurolab is to expand our understanding of neurological functions in space, the research will serve as an educational tool that benefits Earth-based life science research as well," wrote Jay Buckey in his article for the American Society for Gravitational and Space Biology. NeurOn will respond to this broader scope by putting classrooms in touch with the people involved in Neurolab and in neuroscience studies on Earth. Using Web chat technology, classrooms will interact online with these volunteers in real time.

NeurOn joins a long list of successful online education projects hosted by Quest. A full list may be found at **http://quest.arc.nasa.gov/interactive**. For more information, contact Linda Conrad, project manager, at lconrad@mail.arc.nasa.gov.

All about CATs (Cont.)

If you have questions or wish to place orders for multiple copies, the e-mail address is cdrom@rspac.ivv.nasa.gov.

If you'd like to order via fax, the number is (304)367-8211.

(Cost of the CD-ROM outside the US is $3.60 in Canada, $4.50 in Mexico, and $6.50 in all other countries in US dollars only.)

Award-Winning Program

At the Telecon XVII Annual Academy Awards of Teleconferencing, the Best Distance Learning Program via the Internet award was presented to MCET for the program " The Peace It Together Community Center," the Web site developed for the "Safe and Drug-Free Schools and Cummunities" project (**http://www.mcet.edu/peace/index.html**).

Toll-Free Number Gives Teachers LTP Info

Educators who don't have Internet access and wish to find information about NASA's Learning Technologies Project and its individual components are reminded to employ LTP's toll-free number. This toll-free line also handles requests for LTP teacher resource kits. The number is (888)512-4482.

The line is monitored at the Remote Sensing Public Access Center (RSPAC). A database has been established to log all calls and requests.

In the Spotlight

Is your group doing something that's unique, outstanding, or just plain newsworthy? Have you learned something from your LTP experiences that you'd like to share with other groups?

If so, it's time to put your group in the spotlight. In the Spotlight is an *LTP Bulletin* feature that's open to any project. If you'd like to submit an article about your group, please send e-mail to sgillespie@rspac.ivv.nasa.gov.

Nothin' but Net

Color - Friend or Foe?

Misti Hall
RSPAC Graphics Intern
mhall@rspac.ivv.nasa.gov

Did you know that:

- Some colors soothe the body.
- Others can cause fatigue.
- Babies are known to cry more in yellow rooms.
- Blue plates can cause you to eat less.
- Husbands and wives fight more in yellow rooms.

Every color can invoke an emotion, attract or distract attention, or pull a design together or apart. Psychologists say that color can affect whether we like or dislike an object by as much as 60%. No, that doesn't mean you should fill every nook and cranny of a layout with color. Just remember that a little goes a long way, and too much can be a turnoff.

Color can be the life or death of your layout, so choose carefully. When designing the layout, keep your target audience in mind — are you addressing ten-year-olds or fifty-year-olds? Be aware of how the color affects the text. Color text on top of a color background can be a deadly combination. You want to be sure that the viewer can see the text, but you also want to make sure it doesn't jump off the page. Finally, think about the emotions you want the viewer to feel. If you're doing a layout for vacationing in Hawaii you probably want to use warm colors like red, yellow, and orange. If your focus is a ski resort, you'll probably use cool colors such as greens and blues.

So which colors invoke which emotions?

Red:	danger, fire, blood, anger
White:	cleanliness, purity, innocence
Yellow:	sunshine, inspiration, warmth, cowardice
Blue:	sky, ocean, loyalty, honesty
Black:	death, strength, evil, space
Green:	hope, growing, life, peace

This list is a generalization. Colors don't mean the same thing in every culture. For example, white is the color of mourning in many countries, while blue is a sign of wealth in some and loyalty in others.

**** WARNING****

Have you ever seen a layout that has too much yellow, or bright white paper with a glossy finish? You know, the kind people use to type resumes on to make them look more professional. Did you get a headache or have to squint while you were reading? If you did, don't worry. You don't need glasses or have to upgrade your prescription. Yellow, although cheery, can be very bold and irritating. Yellow and white absorb light and reflect it right back into your eyes. Tests have proven that bright papers which reflect light distract a reader's attention and hinder short-term memory. Teachers are now being taught to break from tradition and print worksheets and tests on light blue and darker green paper. Now all of you yellow and white fans don't have to get upset. I'm not saying that you shouldn't use yellow, just use it sparingly. As for white, use a duller shade or save a couple of cents and go without the glossy finish.

In conclusion, try to remember that one of the worst things that can happen to a layout artist is to have the "perfect" layout and then blow it with a poor color scheme. Keep in mind that the average person can see about 7,000,000 colors, and for a designer that's a big margin of error. Choose carefully and good luck.

References:

Photography: Warren, Bruce
Color Matters®: JL Morton
http://www.lava.net/colorcom/optics.html

This bulletin will also be available in Adobe Acrobat format on the Developers' Workshop Web site at **http://developers.ivv.nasa.gov/collab/pubs/bulletin/.**

NASA's Learning Technologies Project's *LTP Bulletin* is a monthly publication produced by the Remote Sensing Public Access Center (RSPAC). RSPAC is a cooperative project of NASA's Office of Aeronautics' High Performance Computing and Communications (HPCC) program, BDM International, and West Virginia University. RSPAC is located at the NASA Software Independent Verification and Validation (IV&V) facility in Fairmont, West Virginia.

RSPAC/BDM
WVU/NASA IV&V Facility
100 University Drive
Fairmont, WV 26554

November 1997

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